

Chapter 9. Air Resources

The project area experiences cool, moist winters and hot, dry summers. The prevailing wind direction is from the south, although winds from the northwest are also common. The region experiences temperature inversions that limit atmospheric mixing and trap pollutants, resulting in high pollutant concentrations near the surface. Surface inversions (0-500 feet) are most frequent during winter, while subsidence inversions (1,000 - 2,000 feet) are most common in the summer.

The Placer County Air Pollution Control District (PCAPCD) is responsible for maintaining and improving air quality throughout Placer County. The PCAPCD published its first Air Quality Attainment Plan (AQAP) in 1991. This plan was designed to bring Placer County into compliance with the state ozone standards, which are equal to or more stringent than existing federal ambient standards.

Both the state and federal governments have established ambient air quality standards for several different pollutants. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). The pollutants of greatest concern in Placer County are carbon monoxide (CO), ozone, and particulate matter less than 10 microns in size (PM₁₀).

Placer County is divided into the Sacramento Valley, Mountain Counties, and Lake Tahoe Air Basins. Meadow Vista is in the Mountain Counties Air Basin. The Mountain Counties Air Basin is classified as a nonattainment area for the state and federal ozone standards and nonattainment for the state PM₁₀ standard. The basin is classified as an attainment area for federal CO standards and is unclassified for state CO standards (unclassified areas have no monitoring stations because it is assumed that standards are not exceeded).

EPA has promulgated new standards for particulate matter less than 2.5 microns in diameter (PM_{2.5}). For PM_{2.5}, the new standards are an annual average of 15 micrograms per cubic meter (ug/m³) and a 24-hour average of 65 ug/m³. Under the regulatory review process, Congress still has an opportunity to review the standards before implementation. Before compliance with these standards could be enforced, each air district would need to establish their attainment status, probably by monitoring. Because this has not been regulated, there is little existing PM_{2.5} data

available. Implementing the measures designed to meet the new standards is expected by EPA to take some time.

IMPACTS

Criteria for Determining Significance

According to the State CEQA Guidelines (Section 15064[e] and Appendix G), a project will normally have a significant impact if it will:

- violate any ambient air quality standard
- expose sensitive receptors to substantial pollutant concentrations
- create objectionable odors

Relevant Community Plan Goals, Policies, and Implementation Programs

The Community Plan includes key goals, policies, and implementation programs that relate to the protection of air quality as it relates to vegetation management:

- 9.L.4.** The County shall discourage open burning of leaves (except leaves still attached to branches).
- 9.L.5.** The County shall encourage reuse or alternative disposal of brush and wood, including use as firewood and chipping followed by the use as mulch, compost or biomass.
- 9.L.8.** The County shall encourage public education programs relative to the use of methods other than outdoor burning for disposal of leaves and vegetative material and use of fuel-efficient wood stoves.

Impact Analysis

Implementation of the Vegetation Management Project would result in air emissions from associated activities. The major sources of air pollution are total and reactive organic gases (TOG and ROG) and oxides of nitrogen (NO_x) emissions from heavy equipment exhaust (both precursors to ozone), and wind-blown dust from earth disturbance. In addition, disposal of wood/vegetative waste by open burning can

create substantial emissions of PM₁₀ as creating a visual nuisance. These impacts are considered significant because of the potential of PM₁₀, ROG and NO_x above the Placer County PCAPCD threshold levels.

Open burning of vegetation and leaves produces emissions of PM₁₀, CO, NO_x, ROG, and other compounds. Emissions are highly variable and depend on a number of factors, including fuel dryness and fire type (smoldering or flaming). Dispersion characteristics of emissions depend on weather conditions.

To compare emissions from a catastrophic fire with those from potential fuel burning from the proposed project, Table 9-1 has been prepared by CDF. The table shows that controlled burns under the PTEIR vegetation management project would significantly reduce overall emissions of target pollutants. The PTEIR project will, of course, not happen all at once, but be spread out over several years, further reducing impacts. If the removed fuels were burned at once, however, the total reductions in pollutants compared to a catastrophic fire would be approximately 2,690 tons of TOG; 435 tons of NO_x; 4,490 tons of suspended particulates; and 27,985 tons of CO. This significant reduction demonstrates the air quality values of fuel reduction by preventing the catastrophic fire or substantially reducing its range and destructive characteristics.

The Meadow Vista Vegetation Management Project contains an important provision that will significantly reduce air emissions and the nuisance effects of smoke. Burning of slash and harvested debris will be limited when undertaken within the PTEIR process. Burning will be encouraged only if other methods of disposal are unavailable or prove infeasible, or when denial of burning would pose a risk of imminent and substantial economic loss. Limited burning which does take place would be in compliance with burn regulations established by the Placer County PCAPCD.

As vegetation is removed and thinned adjacent to roadways, residents could be exposed to greater levels of traffic related emissions. Vegetation does to some degree filter out pollutants through taking in carbon dioxide and giving off oxygen and water. It is also true that vegetation that remains after thinning will be more efficient in taking up carbon dioxide along the roadway. Effects on air quality are considered minor as only portions of vegetation will be removed. Homeowner's can still elect to leave a vegetative screening adjacent to the house consistent with defensible space standards.

Table 9-1 Meadow Vista Fuels and Emissions Analysis

Scenario 1: Project is Not Implemented: Entire Area Burns in Catastrophic Fire

		TOG	NOx	PM	CO	TOG	NOx	PM	CO
Fuel Type	Units Burned	Pounds/Unit Burned				Total Tons of Emissions			
Vegetation(1)	349,000 tons	25.0	4.0	42.0	260.0	4,362.5	698.0	7,329.0	45,370.0
Homes(2)	3,866 tons	13.9	4.0	10.8	168.0	26.9	7.7	20.9	324.7
Autos(3)	320 autos	7.2	0.7	17.0	21.3	1.2	0.1	2.7	3.4
Total						4,390.6	705.8	7,352.6	45,698.1

(1) Assumes available fuels of 50 dry tons/acre x 6,980 acres.

(2) Assumes 1/3 of houses burn, or 639 homes; average size 1,800 sq. ft., 21.118 tons fuel/house, 85% combustion rate.

(3) Assumes that number of autos burned is 1/2 the number of houses, or 320.

Emission factors based on CARB methodologies, Section 9.3-Wildfires, and Section 7.14-Structural and Automobile fires.

Scenario 2: Project is Fully Implemented All at Once. All Removed Fuels are Piled and Burned

		TOG	NOx	PM	CO	TOG	NOx	PM	CO
Fuel Type	Units Burned	Pounds/Unit Burned				Total Tons of Emissions			
Vegetation(1)	136,250 tons	25.0	4.0	42.0	260.0	1,704.1	272.5	2,861.3	17,712.5

(1) Assumes fuels removed at a rate 40% that of total burn (20 dry tons/ac).

Difference Between Scenarios

Total Reduction in Emissions (tons) (Scenario 1 minus Scenario 2)	2,686.5	433.3	4,491.3	27,985.6
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Source: Department of Forestry and Fire Protection, September 2, 1998

California Forest Practice Rules Requirements

All applicable Forest Practice Rules will apply to any PTHP undertaken pursuant to the PTEIR. The following Rules are particularly relevant for air resources. As part of the project description, these Rules will reduce many potential impacts to a less than significant level.

1. During timber operations, road surfaces in the logging area shall be treated for stabilization (rocked, watered, chemically treated, asphalted or oiled) where necessary to prevent excessive loss of road surface materials (943.3(h))
2. Slash to be treated by piling and burning shall be treated not later than April 1 of the year following its creation, or within 30 days following climatic access, or as justified in the plan (937.2)
3. Piles and concentrations shall be sufficiently free of soil and other non-combustible material for effective burning. (937.5 (a))
4. The piles and concentrations shall be burned at a safe time during the first wet fall or winter weather or other safe period following piling and according to laws and regulations. Piles and concentrations that fail to burn sufficiently to remove the fire hazard shall be further treated to eliminate that hazard. All necessary precautions shall be taken to confine such burning to the piled slash (937.5 (a)).

MITIGATION

1. Burn only on designated burn-days stipulated by the Placer County Air Pollution Control District and with all necessary burn permits.
2. Reduce pre-burn fuel loadings by using other treatments.
3. Require material to dry before piling or allow sufficient time after piling for material to dry before burning. Piles that contain little soil and are constructed to allow air movement will result in a burn that consumes significantly more debris and produces less smoke. More efficient burning and greater heat output will lift smoke higher, reducing smoke concentration near the ground.

4. Use mass-ignition techniques that produce a short duration fire thereby increasing combustion efficiency and flow of smoke into the convection column.
5. Prevent stumps from burning and smoldering.

Level of Significance Following Mitigation

With burning restrictions contained within the PTEIR process, and with implementation of the recommended mitigation measures, impacts to air quality will be reduced to a less than significant level.